Appendix A

testMAS: Pressure Sintering

MAS 2.0 - Guides - F.A.Q. - Tutorials - Home

This Process:

Basic Info
More Info
Production
Geometry
Design Guide
Sample Parts
Material Use
Pros / Cons
Variations
Theory
Links

All Processes:

Casting-Die
Casting-Invest
Casting-Sand
Casting-Shell
Casting-Slip
CyberCut
EDM
Extrusion
FDM
Forging
Forming-SheetMetal
Inject Metal/Ceramic
Inject Plastic
JobShopMachining
ME3
Milling
Sintering-Laser
Sintering-Pressure
Stereolithography
Thermoform
Transfer Line
Turning

Hello

Basic Information

One process of forming parts of powdered material parts is by compressing the powdered material, metals, or ceramics, in a die and then sintering the piece thus formed. The powder is molded to the required shape, normally at room temperature, by the application of high-tonnage compacting pressure. No binder or adhesive material is used in this operation. Then, the piece is heat-treated by the process known as sintering to induce optimal strength.

Sintering occurs in a controlled-atmosphere furnace where the green piece (piece straight from compaction) is heated to a temperature close to but not at melting. This is done so that particles may bond by solid state bonding, but not melt. Although both non-metallic and metal powders are used in sintering this web page concentrates on powdered metals.

As applied to ferrous powder metallurgy, the sintering process can be defined as "*a method of controlled atmosphere diffusion bonding particles to produce an engineering material.*"